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Pacific Gas and Electric Company

Lawrence F. Womack
Vice President
Nuclear Services

Diablo Canyon Power Plant
PO Box 56
Avila Beach, CA 93424

805 545 4600
Fax 805 545 4234

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U.S. Nuclear Regulatory Commission
ATTN: Rulemakings and Adjudications Staff
Washington, DC 20555-0001

Comments on Proposed 10 CFR Part 72, July 22, 2002 (67 FR 47745), and Draft Regulatory Guide DG-3021

Ladies and Gentlemen:

Pacific Gas and Electric Company (PG&E) supports the October 22, 2002 comments submitted by the Nuclear Energy Institute addressing the Proposed 10 CFR Part 72, "Geological and Seismological Characteristics for Siting and Design of Dry Cask Independent Spent Fuel Storage Installations and Monitored Retrievable Storage Installations", and Draft Regulatory Guide DG-3021, "Site Evaluations and Determination of Design Earthquake Ground Motion for Seismic Design of Independent Spent Fuel Storage Installations and Monitored Retrievable Storage Installations."

The enclosure contains additional detailed comments.

PG&E appreciates the opportunity to comment on the Proposed 10 CFR Part 72, and Draft Regulatory Guide DG-3021. If there are any questions regarding these comments, please contact Terence Grebel at 805-545-4160 or email him at TLG1@pge.com.

Sincerely,

Lawrence F. Womack

tlg
Enclosure
cc: Diablo Distribution
cc/enc: Lloyd Cluff
Thomas Moulia
Roy Willis

Additional PG&E Comments on Proposed 10 CFR Part 72 and DG-3021

Primary Comment

The primary PG&E comment is that a utility may decide to perform seismic hazards analysis for a proposed ISFSI facility on deterministic bases that are more conservative than the proposed rule, PG&E requests that the proposed 10 CFR 72.103 be revised to continue to allow a 10 CFR Part 100 type deterministic analysis for developing the DE ground motions.

Suggested change:

Page 47747 of Proposed 10 CFR Part 72:

"...a PSHA or suitable sensitivity analyses, for determining the DE. A Part 100 Appendix A deterministic analysis which addresses the uncertainties is one acceptable alternate."

Detail Comments

Comment 1

Page 47747 of Proposed 10 CFR Part 72:

"(1) Applicants who apply on or after the effective date of the final rule, for a part 72 specific license for a dry cask storage ISFSI or MRS, located in either the western U.S. or in areas of known seismic activity in the eastern U.S., and not co-located with a NPP, would be required to address uncertainties in seismic hazard analysis by using appropriate analyses, such as a PSHA or suitable sensitivity analyses, for determining the DE."

This section should continue to allow a Part 100 type deterministic analysis for developing the DE ground motions.

Suggested changes:

"...a PSHA or suitable sensitivity analyses, for determining the DE. A Part 100 Appendix A deterministic analysis which addresses the uncertainties is one acceptable alternate."

Comment 2

Page 47746 of Proposed 10 CFR Part 72:

"1. Because the deterministic approach does not explicitly recognize uncertainties in geoscience parameters, .."

The use of the word uncertainty is ambiguous in this document. SSHAC distinguishes between "aleatory" and "epistemic" uncertainties. The deterministic approach can explicitly recognize epistemic uncertainty just as is done in the probabilistic approach. The deterministic approach does not explicitly include all components of aleatory variability.

Suggested changes:

"1. Because the deterministic approach does not explicitly recognize aleatory uncertainties in geoscience parameters, .."

Comment 3

Page 47748 of Proposed 10 CFR Part 72:

"The commission further recognized that the nature of uncertainty and the appropriate approach to account for it depends on the tectonic environment of the site and on properly characterizing parameters input to the PSHA or suitable sensitivity analyses. The Commission believes that certain new applicants for ISFSI or MRS licenses. As described in Section III, 'Applicability,' above, must use probabilistic methods or other sensitivity analyses to account for these uncertainties instead of using appendix A to part 100."

In a modern PSHA, both the aleatory variability and the epistemic uncertainty are addressed. The aleatory variability is addressed in the hazard integral, and the epistemic uncertainty is addressed through use of a logic tree. With the current wording, it is unclear what uncertainties the sensitivity analyses are suppose to cover. Sensitivity analyses are generally intended for addressing epistemic uncertainty, not aleatory variability.

Suggested changes:

"The Commission believes that certain new applicants for ISFSI or MRS licenses as described in Section III, 'Applicability,' above, must use probabilistic methods or other sensitivity analyses to account for these epistemic uncertainties instead of using Appendix A to part 100."

Comment 4

Page 47754 of Proposed 10 CFR Part 72:

"Sites that lie within the range of strong near-field ground motion from historical earthquakes on large capable faults should be avoided"

The definition of the "range of strong near-field ground motion" is not well defined but it is often taken as about 15 km. This is a very large "set-back" from faults.

The key issue is that the design ground motion should represent the conditions at the site. If a site is located close to a large capable fault, then near-fault effects should be incorporated into the design ground motions rather than excluding these site locations.

Suggested changes:

"Sites that lie within the range of strong near-fault ground motion from large capable faults should explicitly incorporate near-fault effects into the design ground motion."

Comment 5

Lines 79-83 of Draft DG-3021:

The only approach described is a PSHA, but above (lines 63-64) a sensitivity analysis is allowed.

Suggested changes:

Line 83 should read "A PSHA or sensitivity analysis"

Comment 6

Lines 361-365 of Draft DG-3021:

"For non-rock sites, perform a site-specific soil amplification analysis considering uncertainties in site-specific geotechnical properties and parameters to determine response spectra at the free ground surface in the free-field for the actual site conditions. Procedures described in Appendix D of this guide and Reference 21 can be used to perform soil-amplification analyses."

For non-rock sites, a probabilistic approach to the sites response, such as described in NUREG-6728 (Ref 2) should also be allowed.

Suggested changes:

".. described in Appendix D of this guide, Reference 21, or Reference 2"

Comment 7

Lines 492-495 of Draft DG-3021:

The "Mean annual probability of exceedance" is the mean of the annual probability from different branches of the logic tree. The current definition is for the annual probability of exceedance and does not define "mean". The definition of the mean as the mean probability from the branches of the logic tree should be included in the definition.

Comment 8

Appendix C of Draft DG-3021:

Equations (5) and (6) use the mean magnitude and mean distance. If the distribution of magnitude and distance is bi-model, then the use of the mode (or modes) of the magnitude and distance distribution should be used to define the controlling earthquake. It may be necessary to use more than one event if the two modes have similar amplitudes.